WHAT IS CLAIMED IS:

1. A method of preventing or treating an autoimmune or infectious disease or condition, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

2. The method of claim 1, wherein said autoimmune or infectious disease or condition is selected from the group consisting of a viral disease, a viral infection, AIDS, and infection by HIV.

3. The method of claim 1, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

4. The method of claim 1, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

5. The method of claim 1, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

6. The method of claim 1, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

7. The method of claim 1, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

8. The method of claim 7, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs:

1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID NOs: 1-33 and 434-4000.

9. A method of preventing or treating a blood disease or condition, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

10. The method of claim 9, wherein said blood disease or condition is selected from the group consisting of thrombocytopenia, pancytopenia, granulocytopenia, an erythropoietin treatable condition, and a thrombopoietin treatable condition.

11. The method of claim 9, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

12. The method of claim 9, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

13. The method of claim 9, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

14. The method of claim 9, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

15. The method of claim 9, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

16. The method of claim 15, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

17. The method of claim 9, further comprising administering to said subject in need thereof an effective amount of a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

18. A method of modulating blood cell formation, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

19. The method of claim 18, wherein said modulating blood cell formation is selected from the group consisting of inducing hematopoiesis, inducing hematopoietic stem cells proliferation, inducing hematopoietic stem cells proliferation and differentiation, inducing megakaryocytopoiesis, inducing erythropoiesis, inducing leukocytopoiesis, inducing thrombocytopoiesis, inducing plasma cell proliferation, inducing dendritic cell proliferation and inducing macrophage proliferation.

20. The method of claim 18, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

21. The method of claim 18, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

22. The method of claim 18, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

23. The method of claim 18, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

24. The method of claim 18, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

25. The method of claim 24, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

26. The method of claim 18, further comprising administering to said subject in need thereof an effective amount of a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

27. A method of enhancing peripheral stem cell mobilization, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

28. The method of claim 27, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

29. The method of claim 27, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

30. The method of claim 27, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

31. The method of claim 27, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

32. The method of claim 27, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

33. The method of claim 32, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

34. The method of claim 27, further comprising administering to said subject in need thereof an effective amount of a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

35. A method of preventing or treating a metabolic disease or condition, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

36. The method of claim 35, wherein said metabolic disease or condition is selected from the group consisting of NIDDM, IDDM, glucosuria, hyperglycemia, hyperlipidemia, and hypercholesterolemia.

37. The method of claim 35, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

38. The method of claim 35, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

39. The method of claim 35, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

40. The method of claim 35, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

41. The method of claim 35, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

42. The method of claim 41, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

43. A method of preventing or treating conditions associated with myeloablative doses of chemoradiotherapy supported by autologous bone marrow or peripheral blood stem cell transplantation (ASCT) or allogeneic bone marrow transplantation (BMT), the method comprising administering to a

subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

44. The method of claim 43, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

45. The method of claim 43, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

46. The method of claim 43, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

47. The method of claim 43, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

48. The method of claim 43, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

49. The method of claim 48, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

50. The method of claim 43, further comprising administering to said subject in need thereof an effective amount of a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

51. A method of augmenting the effect of a blood cell stimulating factor, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

52. The method of claim 51, wherein said blood cell stimulating factor is selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

53. The method of claim 51, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

54. The method of claim 51, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

55. The method of claim 51, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

56. The method of claim 51, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

57. The method of claim 51, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

58. The method of claim 57, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

59. The method of claim 51, further comprising administering to said subject in need thereof an effective amount of erythropoietin, thrombopoietin or granulocyte colony stimulating factor (G-CSF).

60. A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating a donor of said donated blood stem cells with a therapeutically effective amount of peptide derived from α-, β- or κ-casein or combination thereof prior to donation and implanting the donated blood stem cells in the recipient.

61. The method of claim 60, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

62. The method of claim 60, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

63. The method of claim 60, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

64. The method of claim 60, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

65. The method of claim 60, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

66. The method of claim 65, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs:

1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

67. The method of claim 60, further comprising treating said donor with a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF) prior to donation and implanting the blood stem cells in the recipient.

68. A method of enhancing colonization of donated blood stem cells in a myeloablated recipient, the method comprising treating said donated blood stem cells with a therapeutically effective amount of peptide derived from α-, β- or κ-casein or combination thereof prior to implanting the donated blood stem cells in the recipient.

69. The method of claim 68, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

70. The method of claim 68, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

71. The method of claim 68, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

72. The method of claim 68, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

73. The method of claim 68, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

74. The method of claim 73, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

75. The method of claim 68, further comprising treating said donated blood cells with a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF) prior to implanting the blood stem cells in the recipient.

76. A method of enhancing colonization of blood stem cells in a myeloablated recipient, the method comprising treating said blood stem cells with a peptide derived from α-, β- or κ-casein or combination thereof prior to implanting the blood stem cells in the recipient.

77. The method of claim 76, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

78. The method of claim 76, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

79. The method of claim 76, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

80. The method of claim 76, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

81. The method of claim 76, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

82. The method of claim 81, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

83. The method of claim 76, further comprising treating said blood stem cells with a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF) prior to implanting the blood stem cells in the recipient.

84. A method for preventing or treating a condition associated with a SARS infective agent, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

85. The method of claim 84, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

86. The method of claim 84, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

87. The method of claim 84, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

88. The method of claim 84, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

89. The method of claim 84, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

90. The method of claim 89, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

91. The method of claim 84, wherein said SARS infective agent is a coronavirus.

92. The method of claim 91, wherein said coronavirus is SARS-CoV.

93. A method for preventing or treating a bacterial disease or condition, the method comprising administering to a subject in need thereof a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof.

94. The method of claim 93, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

95. The method of claim 93, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

96. The method of claim 93, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

97. The method of claim 94, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

98. The method of claim 94, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

99. The method of claim 98, wherein said chimeric peptide comprises a first αS1-casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

100. A pharmaceutical composition for preventing or treating an autoimmune or infectious disease or condition, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

101. The of claim 100, wherein said autoimmune or infectious disease or condition is selected from the group consisting of a viral disease, a viral infection, AIDS, and infection by HIV.

102. The pharmaceutical composition of claim 100, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

103. The pharmaceutical composition of claim 100, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

104. The pharmaceutical composition of claim 100, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

105. The pharmaceutical composition of claim 100, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

106. The pharmaceutical composition of claim 100, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

107. The pharmaceutical composition of claim 106, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

108. A pharmaceutical composition for preventing or treating a blood disease or condition, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

109. The pharmaceutical composition of claim 108, wherein said blood disease or condition is selected from the group consisting of thrombocytopenia, pancytopenia, granulocytopenia, an erythropoietin treatable condition, and a thrombopoietin treatable condition and a granulocyte colony stimulating factor treatable condition.

110. The pharmaceutical composition of claim 108, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

111. The pharmaceutical composition of claim 108, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

112. The pharmaceutical composition of claim 108, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

113. The pharmaceutical composition of claim 108, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

114. The pharmaceutical composition of claim 108, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

115. The pharmaceutical composition of claim 114, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set

forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

116. The pharmaceutical composition of claim 108, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

117. A pharmaceutical composition for modulating blood cell formation, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

118. The pharmaceutical composition of claim 117, wherein said modulating blood cell formation is selected from the group consisting of inducing hematopoiesis, inducing hematopoietic stem cells proliferation, inducing hematopoietic stem cells proliferation and differentiation, inducing megakaryocytopoiesis, inducing erythropoiesis, inducing leukocytopoiesis, inducing thrombocytopoiesis, inducing granulocytopoiesis, inducing plasma cell proliferation, inducing dendritic cell proliferation and inducing macrophage proliferation.

119. The pharmaceutical composition of claim 117, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

120. The pharmaceutical composition of claim 117, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

121. The pharmaceutical composition of claim 117, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

122. The pharmaceutical composition of claim 117, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

123. The pharmaceutical composition of claim 117, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

124. The pharmaceutical composition of claim 123, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

125. The pharmaceutical composition of claim 117, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

126. A pharmaceutical composition for enhancing peripheral stem cell mobilization, the pharmaceutical composition comprising, as an active ingredient, a therapeutically effective amount of a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

127. The pharmaceutical composition of claim 126, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

128. The pharmaceutical composition of claim 126, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

129. The pharmaceutical composition of claim 126, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

130. The pharmaceutical composition of claim 126, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

131. The pharmaceutical composition of claim 126, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

132. The pharmaceutical composition of claim 131, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

133. The pharmaceutical composition of claim 126, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

134. A pharmaceutical composition for preventing or treating a metabolic disease or condition, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

135. The pharmaceutical composition of claim 134, wherein said metabolic disease or condition is selected from the group consisting of NIDDM, IDDM, glucosuria, hyperglycemia, hyperlipidemia, and hypercholesterolemia.

136. The pharmaceutical composition of claim 134, wherein said peptide derived from αS1 casein is a synthetic peptide.

137. The pharmaceutical composition of claim 134, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

138. The pharmaceutical composition of claim 134, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

139. The pharmaceutical composition of claim 135, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

140. The pharmaceutical composition of claim 135, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

141. The pharmaceutical composition of claim 140, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

142. A pharmaceutical composition for preventing or treating conditions associated with myeloablative doses of chemoradiotherapy supported by autologous bone marrow or peripheral blood stem cell transplantation (ASCT) or allogeneic bone marrow transplantation (BMT), the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

143. The pharmaceutical composition of claim 142, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

144. The pharmaceutical composition of claim 142, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

145. The pharmaceutical composition of claim 142, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

146. The pharmaceutical composition of claim 142, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

147. The pharmaceutical composition of claim 142, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

148. The pharmaceutical composition of claim 147, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

149. The pharmaceutical composition of claim 142, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

150. A pharmaceutical composition for augmenting the effect of a blood cell stimulating factor, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

151. The pharmaceutical composition of claim 150, wherein said blood cell stimulating factor is selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

152. The pharmaceutical composition of claim 150, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

153. The pharmaceutical composition of claim 150, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

154. The pharmaceutical composition of claim 150, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

155. The pharmaceutical composition of claim 150, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

156. The pharmaceutical composition of claim 150, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

157. The pharmaceutical composition of claim 156, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

158. The pharmaceutical composition of claim 150, further comprising, as an active ingredient thrombopoietin, erythropoietin or granulocyte colony stimulating factor (G-CSF).

159. A pharmaceutical composition for enhancing colonization of donated blood stem cells in a myeloablated recipient, the pharmaceutical composition comprising, as active ingredients, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

160. The pharmaceutical composition of claim 159, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

161. The pharmaceutical composition of claim 159, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

162. The pharmaceutical composition of claim 159, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

163. The pharmaceutical composition of claim 159, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

164. The pharmaceutical composition of claim 159, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

165. The pharmaceutical composition of claim 164, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

166. The pharmaceutical composition of claim 159, further comprising, as an active ingredient thrombopoietin, erythropoietin or granulocyte colony stimulating factor (G-CSF).

167. A pharmaceutical composition for enhancing colonization of blood stem cells in a myeloablated recipient, the pharmaceutical composition comprising as active ingredients, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

168. The pharmaceutical composition of claim 167, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

169. The pharmaceutical composition of claim 167, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

170. The pharmaceutical composition of claim 167, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

171. The pharmaceutical composition of claim 167, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

172. The pharmaceutical composition of claim 167, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

173. The pharmaceutical composition of claim 172, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

174. The pharmaceutical composition of claim 167, further comprising, as an active ingredient thrombopoietin, erythropoietin or granulocyte colony stimulating factor (G-CSF).

175. A pharmaceutical composition for treating or preventing an indication selected from the group consisting of autoimmune disease or condition, viral disease, viral infection, hematological disease, hematological deficiencies, thrombocytopenia, pancytopenia, granulocytopenia, hyperlipidemia, hypercholesterolemia, glucosuria, hyperglycemia, diabetes, AIDS, HIV-1, helper T-cell disorders, dendrite cell deficiencies, macrophage deficiencies, hematopoietic stem cell disorders including platelet, lymphocyte, plasma cell and neutrophil disorders, pre-leukemic conditions, leukemic conditions, immune system disorders resulting from chemotherapy or radiation therapy, human immune system disorders resulting from treatment of diseases of immune deficiency and bacterial infections, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

176. The pharmaceutical composition of claim 175, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

177. The pharmaceutical composition of claim 175, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

178. The pharmaceutical composition of claim 175, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

179. The pharmaceutical composition of claim 175, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

180. The pharmaceutical composition of claim 175, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

181. The pharmaceutical composition of claim 180, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

182. The pharmaceutical composition of claim 175, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

183. A pharmaceutical composition for treating or preventing an indication selected from the group consisting of hematological disease, hematological deficiencies, thrombocytopenia, pancytopenia, granulocytopenia, dendrite cell deficiencies, macrophage deficiencies, hematopoietic stem cell disorders including platelet, lymphocyte, plasma cell and neutrophil disorders, pre-leukemic conditions, leukemic conditions, myelodysplastic syndrome, non-myeloid malignancies, aplastic anemia and bone marrow insufficiency, the pharmaceutical composition comprising, as active ingredients, a blood cell stimulating factor and a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

184. The pharmaceutical composition of claim 183, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

185. The pharmaceutical composition of claim 183, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

186. The pharmaceutical composition of claim 183, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

187. The pharmaceutical composition of claim 183, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

188. The pharmaceutical composition of claim 183, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

189. The pharmaceutical composition of claim 188, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

190. The pharmaceutical composition of claim 183, wherein said blood cell stimulating factor is selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

191. A purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1- 33.

192. A purified chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

193. The chimeric peptide of claim 192 comprising a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

194. A pharmaceutical composition comprising a purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-33 and a pharmaceutically acceptable carrier.

195. A pharmaceutical composition comprising a purified chimeric peptide, said chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage, and a pharmaceutically acceptable carrier.

196. The pharmaceutical composition of claim 195, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

197. A pharmaceutical composition comprising a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF), in combination with a purified peptide having an amino acid sequence selected from the group consisting of SEQ ID NOs: 1-33 and a pharmaceutically acceptable carrier.

198. A pharmaceutical composition comprising a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF), in combination with a purified chimeric comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

199. The pharmaceutical composition of claim 198, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

200. A pharmaceutical composition for preventing or treating a condition associated with a SARS infective agent, the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

201. The pharmaceutical composition of claim 200, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

202. The pharmaceutical composition of claim 200, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

203. The pharmaceutical composition of claim 200, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

204. The pharmaceutical composition of claim 200, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides:

205. The pharmaceutical composition of claim 200, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

206. The pharmaceutical composition of claim 205, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

207. The pharmaceutical composition of claim 200, further comprising, as an active ingredient, a blood cell stimulating factor, said blood cell stimulating factor selected from the group consisting of thrombopoietin, erythropoietin and granulocyte colony stimulating factor (G-CSF).

208. The pharmaceutical composition of claim 200, wherein said SARS infective agent is a coronavirus.

209. The pharmaceutical composition of claim 208, wherein said coronavirus is SARS-CoV.

210. A pharmaceutical composition for preventing or treating a bacterial infection the pharmaceutical composition comprising, as an active ingredient, a peptide derived from α-, β- or κ-casein or combination thereof and a pharmaceutically acceptable carrier.

211. The pharmaceutical composition of claim 210, wherein said peptide is a fragment derived from the N terminus portion of αS1 casein by fragmentation of αS1 casein.

212. The pharmaceutical composition of claim 210, wherein said peptide derived from α-, β- or κ-casein is a synthetic peptide.

213. The pharmaceutical composition of claim 210, wherein said peptide derived from α-, β- or κ-casein has a sequence as set forth in one of SEQ ID NOs: 1-33.

214. The pharmaceutical composition of claim 210, wherein said combination of peptides derived from α-, β- or κ-casein is a mixture of peptides.

215. The pharmaceutical composition of claim 210, wherein said combination of peptides derived from α-, β- or κ-casein is a chimeric peptide comprising at least two peptides derived from α-, β- or κ-casein in covalent linkage.

216. The pharmaceutical composition of claim 215, wherein said chimeric peptide comprises a first αS1 casein peptide having a sequence as set forth in one of SEQ ID NOs: 1-25 covalently linked to a second casein peptide having a sequence as set forth in any of SEQ ID Nos: 1-33 and 434-4000.

217. A method of low-temperature processing of casein proteolytic hydrolysate, the method comprising:

a) obtaining a casein proteolytic hydrolysate comprising proteolytic enzymes;

b) cooling said casein proteolytic hydrolysate so as to inactivate said proteolytic enzymes;

c) adjusting the pH of said casein protein hydrolysate to an acid pH;

d) filtering said acidic casein protein hydrolysate, collecting the filtrate, and further acidifying said filtrate so as to precipitate proteins derived from natural casein;

e) separating and collecting said precipitate;

f) adjusting the pH of said precipitate to an alkaline pH so as to irreversibly inactivate said proteolytic enzymes; and

g) adjusting the pH of said precipitate to pH 7-9;

thereby processing said casein protein hydrolysate at low temperature.

218. The method of claim 217, wherein step b comprises cooling to about 10°C.

219. The method of claim 217, wherein said adjusting said pH of step c comprises addition of acid to 2% (w/v) acid, and whereas said further acidifying said filtrate of step d comprises additional addition of acid to about 10% (w/v) acid.

220. The method of claim 217, wherein said alkaline pH of step f is at least pH 9.

221. A casein protein hydrolysate processed at low temperature according to the method of claim 217.